

IN-LINE ROLLER SKATES WITH ADJUSTABLE DIMENSION

FIELD OF THE INVENTION

5 The present invention relates to in-line roller skates with adjustable dimension and particularly to an in-line roller skate that has an adjusting mechanism consisting of two matching threads for adjusting the dimension of a two-piece shoe cap on the roller skate.

BACKGROUND OF THE INVENTION

10 In-line roller skating is a very popular exercise in Taiwan. It is estimated that between 200,000 and 300,000 of people participate this exercise. These people range from 6 years old to 40 years old. The core exercise fans are people at the age between 6 and 22 years. In-line roller skates basically can be
15 grouped in five types that have different designs and characteristics to achieve different functions as follows:

1. Leisure skates: they are the most common type, and usually consist of an inner pad and a shoe cap. They mainly aim at providing comfort and safety, and are designed for
20 recreational use for the general public rather than for specific exercise purpose. In recent years producers have focused on color matching. The wheels and bearings are replaceable according to user's preferences and requirements. The wheels also have many color selections. 2. Stunt skates: they are
25 versatile and respond to challenging actions. They usually

attract most attention, and are used mostly by young people. Whether with a U-shaped deck or jumping board, they have special design requirements. As there are many jumping actions occurred, they require a balanced base deck and sturdy
5 and well-covered inner pad to avoid exercise injury. They also are smaller size and have a flat and wider shape to make landing on the ground more stable. They usually are coupled with straps and lateral sliding flaps and base deck guarding flap to serve as latch lever. 3. Hockey skates: because many
10 clubs and teams are established in recent years, in-line roller hockey skates also have been developed. As there is no restriction for sites, and some communities provide sites, amateur players have increased gradually. The in-line roller hockey skates usually adopt an integrated forming without
15 inner pad so that they enable the foot to fit the shoe more closely, and moving forwards and goal shooting may be exercised quickly. Their material is mainly leather. 4. Speeding skates: generally for professional speeding players aiming for high speed. They generally use high class wheels
20 and more precise bearings, and usually have five wheels. The base deck mostly is made from aluminum alloy to transmit power more accurately. The wheels have diameters ranging from 76 mm to 80 mm, and usually are formed in a sharp profile to reduce friction force with the ground surface. 5.
25 Figure skates: aiming for exercises such as figure skating.

They are not very popular. They usually have a base deck coupling with three or four wheels, and have a stop at the front end of the base deck to facilitate performing pivot and leap actions.

5 The adjustable roller skates now available on the market as shown in FIGS. 1 and 2 mainly have a straight slot or anchor holes on the truck or the lateral side. There is a sliding mechanism located on the bottom of the roller skate for moving the position of the shoe cap. Screws are coupled on
10 the straight slot or anchor holes for anchoring the position. When the screws are unfastened, the shoe cap may be slid freely on the truck to adjust the dimension. Once the dimension is decided, the screws are fastened to the straight slot or anchor holes. Hence the dimension of the shoe cap may
15 be adjusted for more than one people to wear. It also resolves the problem of the foot outgrowing the roller skate. As the anchor holes have limited intervals, the dimension adjusting range of the roller skates also is limited. The straight slot does not have such a problem, thus can adjust the dimension more
20 freely. However, the screws are difficult to fasten and easy to get lost. All of this often causes inconvenience when in use.

SUMMARY OF THE INVENTION

The primary object of the invention is to resolve the aforesaid disadvantages. The invention provides a screw type
25 adjusting mechanism to adjust the dimension of the in-line

roller skates. It consists of:

a two-piece shoe cap which includes a toe cap and a heel cap to accommodate the foot of users. Its dimension is adjustable according to the size of the foot;

5 a truck having a bottom to couple with wheels thereunder for the roller skate to slide on the ground surface and brace the two-piece shoe cap; and

an adjusting mechanism which includes a first adjusting member and a second adjusting member mounted onto a holding trough of the truck and the bottom of the two-piece shoe cap. The two adjusting members adopt a screw design. The first adjusting member is located on the truck, while the second adjusting member is located on the bottom of the two-piece shoe cap and has a turning knob on the rear side. By
10 rotating the turning knob, the matching screws threads on the adjusting mechanisms may move forwards or rearwards to drive the shoe cap to move forwards or rearwards thereby to adjust the dimension according to the size of the foot.

The foregoing, as well as additional objects, features and
20 advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an in-line roller skate adopted
25 a conventional technique.

FIG. 2 is a side view of an in-line roller skate adopted a conventional technique.

FIG. 3 is a perspective view of the embodiment of the present invention.

5 FIG. 4 is an exploded view of the embodiment of the present invention.

FIG. 5A is a schematic view of the embodiment of the present invention in an operating condition.

FIG. 5B is a schematic view of the embodiment of the present
10 invention in another operating condition.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Please referring to FIG. 3, the in-line roller skate according to the invention includes a truck 10 which has a plurality of
15 wheels 11 on the bottom and braces a two-piece shoe cap 14 on an upper side. The two-piece shoe cap 14 includes a toe cap 140 and a heel cap 141 to accommodate the foot of a user. There are a plurality of straps 142 on the two-piece shoe cap 14 for adjusting the tight and loose fitness of the two-piece
20 shoe cap 14.

Referring to FIG. 4, the truck 10 aims at bracing the two-piece shoe cap 14 that have respectively a sliding track 17 and a sliding section 16 and then, meanwhile a use of an adjusting mechanism having a first adjusting member 123 and
25 a second adjusting member 120 mounted onto a holding

trough mating each other to enable the heel cap 141 to slide freely on the truck 10. The toe cap 140 has an anchor section 21 and anchor screws 23 and 23' on the bottom. The first adjusting member 123 is provided that has sliding slots 25 and 25' located on two sides thereof. The anchor section 21 is engageable with an anchor hole 21' on the truck 10 so that the toe cap 140 may match and be anchored on an anchor cavity 22 formed on the truck 10. The anchor screws 23 and 23' are fastened to matching apertures 24 and 24' formed on the truck 10 so that the toe cap 140 is fixed while the heel cap 141 is slidable. Moreover, the sliding section 16 has a window 20 and the truck 10 has scale marks to enable users to see the scale marks through the window 20 to facilitate dimension adjustment. The heel section of the truck 10 has a holding trough 13 for holding the second adjusting member 120. The first adjusting member 123 mates the second adjusting member 120 and is located on the bottom of the heel cap 141. The adjusting mechanism 12 is used to adjust the position of the two-piece shoe cap 14 thereby to alter the dimension thereof.

The second adjusting member 120 is a cylindrical rod. It has one end coupling with a turning knob 18 and other end forming a latch head 19. Namely, the second adjusting member 120 has a narrower neck section to be wedged in the holding trough 13 so that the second adjusting member 120

may be turned by the turning knob 18 without skewing. The first adjusting member 123 is formed in a curved shape mating the form of the first adjusting member 123. The first adjusting member 123 and the second adjusting member 120 have
5 respectively a screw thread section 124 and 124'. The pitches of the screw threads are engageable with one another to generate longitudinal displacements. In addition, the relative positions of the first adjusting member 123 and the second adjusting member 120 may be switched.

10 Referring to FIGS. 5A and 5B, the second adjusting member 120 is located in the holding trough 13 with the latch head 19 also wedging therein. Turning the turning knob 18, the second adjusting member 120 is rotated on a fixed location, while the first adjusting member 123 is moved forwards or
15 rearwards horizontally due to thrusting of the engaging screw threads. As a result, the engaged heel cap 141 also is moved horizontally at the same time. Thus the dimension of the roller skate may be altered and adjusted. When the rotation of the turning knob 18 is stopped, the screw thread sections 124 and
20 124' are latched with each other for anchoring.

While the preferred embodiment of the invention has been set forth for the purpose of disclosure, modifications of the disclosed embodiment of the invention as well as other embodiments thereof may occur to those skilled in the art.
25 Accordingly, the appended claims are tended to cover all

embodiments which do not depart from the spirit and scope of the invention.